" NOVEL COVID 19 CORONA VIRUS"

LET'S DISCUSS TREATMENT POSSIBILITIES- Part I

The Keys to win over Corona Covid 19:

- **Social Distancing (Mass Population)**
- **Quarantine (For Contacts)**
- **Isolation (For Cases)**

Let's now discuss a bit about "IMMUNITY" and "Treatment Possibilities"

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Let's understand IMMUNITY first

Characteristics	Innate Immunity	Acquired Immunity
Presence	Already Present in the Body at birth.	Created in response to exposure to a foreign substance during lifetime.
Specificity	Non Specific	Specific
Response	Fights any foreign invader	Fights only specific infections
Response	Rapid	Slow (1-2 weeks)
Potency	Limited and Lower	High Potency
Time Span	Lifelong immunity once activated against specific antigen.	Can be lifelong or Short.
Memory	Weak	Strong
Used Against	Microbes	Microbes and non-microbes
Composition	Physical Barriers, Chemical Barriers, Phagocytic Leukocytes, Dendritic Cells, NK cells, Plasma Proteins	B Cells, T Cells

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MEDICINE	PREVENTION AGAINST INFECTION	PREVENTION AGAINST COMPLICATIONS
Chloroquine	Questionable	Possible
Atlizumab	No	Probable
Oseltamivir	No	Probable
Ritonavir	No	Probable
Darunavir	No	Probable
Atazanivir	No	Probable
Lopinavir	No	Probable
Zinc supplements	No	Questionable
Vitamin A	No	Questionable
Selenium	No	Questionable
Vitamin D	No	Probable
Vitamin C	No	Probable
Thiamine	No	Questionable

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CHLOROQUINE/HCQ

- Antimalarial
- Easily available in the market (Lariago/HCQ)

Approved uses:

- Malaria Prophylaxis (Prevention)
- Malaria Treatment
- Rheumatoid Arthritis
- Treatment of Entamoeba histolytica (Liver Amoebiasis)
- Treatment of Giardia Lambia
- Management of Lepra Reaction

Other effects:

- Antiinflammatory
- Local irritant
- Local Anaesthetic
- Smooth muscle relaxant
- Antihistaminic
- Antiarrythmic

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CHLOROQUINE/HCQ

How does Chloroquine work as anti-inflammatory?

- Reduce Monocyte IL-1
- Inhibits B Lymphocytes
- Interferes with Antigen Processing
- Stabilizes Lysosomes
- Free Radical Scavanging

Potential/Possible mechanism of action in Covid-19 Corona Virus management?

- Alters cellular pH : Alters Virus-Cell integration.
- Alters ACE 2 receptor- Virus integration.
- Works as Zinc Ionophore.
- As anti-inflammatory it controls the robust immune response of the body against the Virus and hence prevents destruction.

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CHLOROQUINE/HCQ

As Zinc Ionophore:

- Chloroquine increases the transport of Zinc ions inside the cells.
- The Zinc inside the cells inhibit the "RNA Dependent RNA Polymerase".
- This process inhibits the replication of Virus inside the cells.

Additional Effects of Intracellular Zinc:

- Increases the influx of Vitamin D inside the cell.
- The intracellular Vitamin D has its own effects on the immunity mediation (mainly Innate Immunity).

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Communicable Disease Center

Protocol for Treatment of confirmed COVID-19 Infection

1. Treatment of COVID-19 Upper Respiratory Tract Infection (Fever, runny nose, cough without lung infiltrate+ positive PCR)

	Route of administration	Proposed dose for COVID-19
Chloroquine phosphate	PO	500 mg BID 5 days
	+	
Oseltamivir	PO	150 mg BID for 5 days

2. Treatment of COVID-19 Pneumonia

	Route of administration	Proposed dose for COVID-19
Chloroquine phosphate	PO	500 mg BID 10 days
		+
Darunavir /Cobicistat) (Rezolsta ®)	PO	Darunavir 800 mg/Cobicistat 150 mg OD for 2 weeks
		OR
Atazanavir (Reyataz)	PO	400 mg once daily with food for 2 weeks
		+
Oseltamivir	PO	150 mg BID
		+/-
Corticosteroids	IV	Methylprednisolone 40 mg q12h for 5 days

SPECIMIN COLLECTION:

1- Combined nasopharyngeal/oropharyngeal swab
2- If positive repeat every 3 days till negative
3- If negative repeat second test after 24 hours
4- If 2 consecutive negative isolation can be discontinued

- Lower respiratory specimen is preferred when applicable
- Airborne and contact isolation is recommended for further information contact your infection control practitioner.

Prepared by CDC MICC Team, version 1 (28-02-2020)

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COVID-19 Management Protocol
AIIMS , New Delhi

20th March 2020

COVID-19 Suspect

i) Any patient with acute respiratory illness (fever with at least one of the following- cough or shortness of breath) with:

- History of travel to high-risk COVID-19 affected countries in the last 14 days, or
- Close contact with a laboratory confirmed case of COVID-19 in the 14 days, or
- Health care personnel (HCP) managing respiratory distress/ severe acute respiratory illness cases, when they are symptomatic

Asymptomatic traveller/close contact

- Home quarantine
- Twice daily self monitored temperature
- Contact & droplet precautions

On developing symptoms → COVID-19 Suspect

Mild case

Low-grade fever, cough, malaise, rhinorrhea, sore throat without shortness of breath

Treatment
Tab oseltamivir 75mg BD (for high-risk influenza suspects)
Antibiotics if needed (azithromycin+ amox /clav)
Tab Paracetamol 500 mg SOS
Symptomatic

Call helpline
011- 23978046

Test negative
Symptomatic management

Test positive

- Home isolation (>72 hrs afebrile or 7 days after symptom onset whichever is longer)/two negative samples 24 hours apart
- Self-monitoring for fever
- Paracetamol & symptomatic Rx
- Contact & droplet precautions
- Danger signs explained
- High-risk individuals* may be considered for admission based on clinical judgement

Moderate to severe case

Any one of:
1. Respiratory rate > 24/min
2. SpO2 < 94% in room air
3. Confusion/drowsiness
4. Systolic BP < 90 mmHg or diastolic BP < 60 mmHg

Admit & test

Test negative
Manage according to existing protocol

Test positive

- Oxygen supplementation to maintain SpO2>94%
- Antipyretics, antitussives, antibiotics as indicated
- MDI preferred over nebulization
- Hydroxychloroquine (400 mg BD x 1 day f/b 200 mg BD x 5 days) may be considered
- Lopinavir/ritonavir(200 mg 2 tab BD) may be considered on case-to-case basis (within 10 days of symptom-onset)
- Do not combine Hydroxychloroquine with Lopinavir in view of drug interactions
- Corticosteroids to be avoided

If worsening:

- Respiratory failure
- Hypotension
- Worsening mental status
- MODS

Shift to ICU

- NIV/HFNC to be used carefully in view of risk of aerosol generation
- Ventilator management as per ARDS protocol
- Conservative fluid management (if not in shock)
- Standard care for ventilated patient
- Closed suction and HME filters
- Prone ventilation, ECMO for refractory hypoxemia.

After clinical & radiological improvement / Improving →

Discharge
if two negative samples at least 24 hours apart

***High-risk for severe disease**
- ✓ Age > 60 years
- ✓ Cardiovascular disease including hypertension
- ✓ DM, other immunocompromised states
- ✓ Chronic lung/kidney/liver disease

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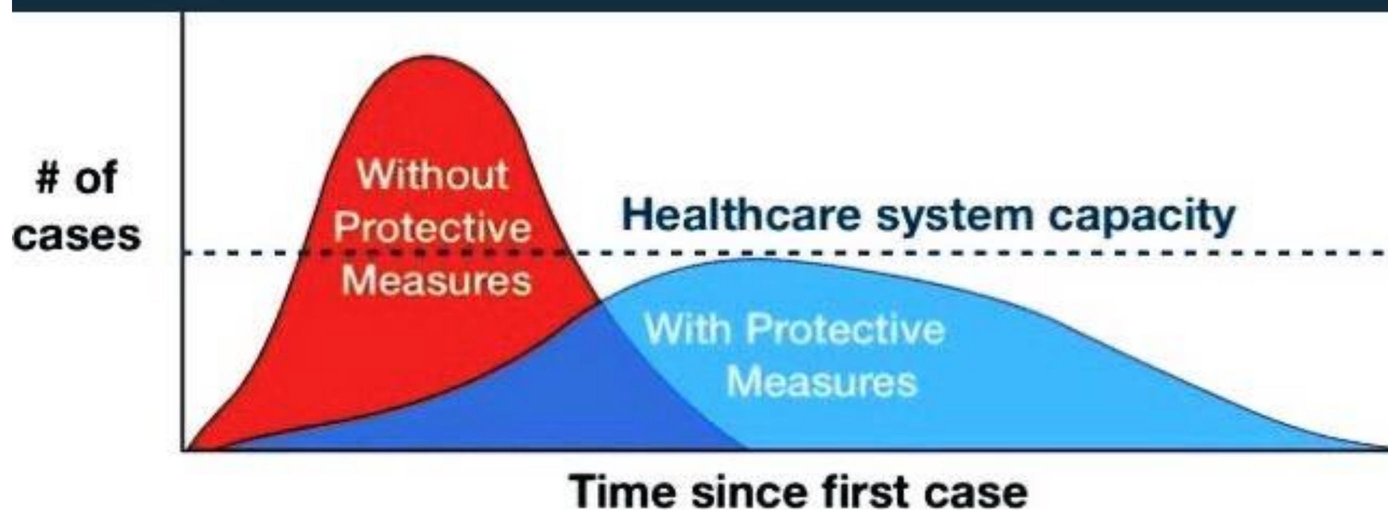

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